



## Open Plenary Minutes – 14th September 2021

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**Timing:** 10.00-12.00  
**Chair:** Nigel Thrift (CoRWM Chair)  
**Members:** Claire Corkhill, Penny Harvey, Neil Hyatt, Ray Kemp, Mark Kirkbride, Derek Lacey, Geraldine Thomas and Stephen Tromans

### **CoRWM**

**Secretariat (BEIS):** Mariana Ghosh, Robert Heymer and Shubhnit Seera

**Attendees:** Phillip Matthews, Catherine Draper, Darryl Lee, Graham Smith, William Evans, Roy Payne, Bruce Cairns, Maxine Craig, Dr Candida Lean, Mark Gilbert, Sacha Bedding, Edward Lewis-Smith, Alex Taylor, Sally Forbes and Celestine Cheong

### Agenda:

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| <b>1. Meeting open, welcome and introductory comments (Chair)</b>  | 10.00 |
| Chair's recent meetings  |       |
| <b>2. Declaration of Interests</b>   | 10.10 |
| <b>3. Approval of Minutes from the <a href="#">May Open Plenary</a></b>  | 10.15 |
| <b>4. Annual Update on Subgroup Activities and Plans</b>   | 10.20 |
| <i>Key topics:</i>   |       |
| a) SG 1 Working with Communities (Penny Harvey)  |       |
| b) SG 2 GDF Geology and Delivery (Mark Kirkbride)  |       |
| c) SG 3 Planning and Regulation (Stephen Tromans)  |       |
| d) SG 4 Scottish Government Activities (no update)   |       |
| e) SG 5 Welsh Government Activities (Gerry Thomas)   |       |
| f) SG 6 Storage of Waste, Spent Fuel, and Materials (Derek Lacey)  |       |
| <b>5. Presentation</b>   | 11.00 |
| <b><u>Speaker: Professor Neil Hyatt (University of Sheffield)- “An assessment of radioactive wastes from nuclear fusion”</u></b> |       |
| <b>6. Questions from the public</b>  | 11.40 |
| <b>7. Any other business</b>   | 11.50 |



8. **Next Meeting:** 23<sup>rd</sup> November 2021, Edinburgh (TBC by Nigel)

***Close of Meeting***

***12.00***

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## Minutes

### Agenda Item 1. Meeting open, welcome and introductory comments

1. NT introduced CoRWM and their role as independent advisory committee.
2. NT informed the attendees that the Regulation Position Paper was released in May, and that the Inshore Position Paper is due to be released next, with the final draft to be reviewed by key stakeholders.
3. NT mentioned that CoRWM were commissioned by BEIS to review the status of work undertaken by NDA on options for management and disposal of Uranics.

### Agenda Item 2. Declaration of Interests

4. Stephen Tromans (ST) stated that he has provided advice to the NDA, Magnox Limited and BEIS on the transaction relating to transfer of the AGR stations. This related to constitutional issues under the Energy Act and company law and does not relate to or impact on CoRWM's work. The work is now completed.
5. Ray Kemp (RK) stated that he has been engaged by the Dounreay Stakeholder Group (DSG) to undertake a review of their working processes and remit.
6. Gerry Thomas (GT) stated that she featured in a video for EDF finances and GreensForNuclear. There is no conflict of interest.

### Agenda Item 3. Approval of Minutes from the Previous Plenary

7. The [minutes from the May Plenary](#) were approved.

### Agenda Item 4. Update on Subgroup Activities and Plans

- a) *SG 1 Working With Communities*
8. Penny Harvey (PH) stated that SG1 are tasked to advise on the implementation of Working With Communities (WWC) Policy.



9. PH stated that SG1 focus on the integration of BEIS, NDA and RWM communications.
10. PH stated that SG1 are watching how the GDF is discussed with respect to NSD to ensure communications are aligned and clear. Claire Corkhill (CC) and Neil Hyatt (NH) are producing accessible materials which we hope to make available on the CoRWM website.
11. PH updated the committee following developments for the Working Groups in Copeland and Allerdale. PH stated that SG1 attended webinars hosted by the Working Groups. PH stated that there is need for greater numbers to ensure wider community engagement. PH stated that SG1 are maintaining close contact with the Communications and Stakeholder engagement team with RWM as communities move towards forming Community Partnerships. PH stated that there is room for Social Innovations regarding community engagement.
12. PH mentioned 3 issues surrounding the progress of Working Groups in East Lincolnshire and Hartlepool:
  - a. RWM could have been clearer regarding only being in the initial stages of conversation rather than the GDF development being well underway. PH stated that RWM should perhaps clarify the process before safety or GDF structure.
  - b. The title of Siting Manager sent a wrong message when engaging with the community, though they were the correct person for the job, with the message being that the process was much further along.
  - c. Confidentiality can be conflated with secrecy leading to mistrust. PH suggested need for further clarification on how and when initial conversations are made public and on the reasons for confidentiality.
13. PH thanked Ray Kemp (RK) for his work on the Position Paper on Principles of Community Engagement. PH mentioned there is an interest in looking for more innovative ways of engaging communities and addressing social issues.

*b) SG 2 GDF Geology and Delivery*

14. MK stated that SG2 prepared a further draft of a Position Paper on Inshore GDF Siting (a GDF accessed from on land but sited deep underneath the seabed), and it will be circulated to key stakeholders soon.



15. MK stated that he received feedback from stakeholders on the draft GDF Cost Estimate Position Paper.
16. MK stated SG2 have discussed retrievability, as some of the public take the view that wastes disposed of in a GDF may have value in the future and it may be beneficial to retrieve them. CoRWM's historical view is that once the GDF is closed, retrievability is not necessary (CoRWM doc. [700](#)). SG2 aim to prepare an updated recommendation or view that will review this.
17. MK stated that SG2 continue to engage regularly with RWM, and have been updated on their R&D including the borehole sealing project.
18. MK stated that SG2 have also produced a 12 Month Forward Look, and contributed to the Fusion workstream.

*c) SG 3 Planning and Regulation*

19. ST stated that the Regulation Position Paper was published in May and has been well-received by stakeholders. The Position Paper was presented to the Regulatory Interface Group in July, and SG3 aim to continue engagement with regulators, including MMO and PINS, over the next year. SG3 aim to host a cross-regulator event in early 2022.
20. ST stated that SG3 have contributed to the Inshore Position Paper. SG3 discussed how it relates to a community where there is no clear above-site community, which other interested parties may be involved, and how public international law may affect it in ways that an onshore facility would not.
21. ST stated that SG3 have also contributed to SG1's work on Working With Communities, and commented that the process must work within the legal framework of procedural fairness, and may be subject to judicial review challenges.
22. ST stated that SG3 also contributed to CoRWM's fusion work, looking at potential regulatory issues.
23. ST stated that SG3 will look at the regulatory implications of the reorganisation of NDA's Nuclear Waste Services division.
24. Graham Smith commented that inshore geological disposal may raise regulatory concerns over groundwater effects. ST stated that SG3 had not focused on this, but may explore it in the future.



*d) SG 4 Scottish Government Activities*

25. NT stated that there has been no activity, as the Higher Activity Waste (HAW) policy review has not yet begun.

*e) SG 5 Welsh Government Activities*

26. GT stated that the Welsh Government published their [Direction](#) which replaces Article 37 to deal with transboundary issues.

27. James Gibbs stated that the Welsh Government are working with BEIS on consultation documents on an overarching policy framework for Radioactive Substances and Decommissioning.

*f) SG 6 Storage of Waste, Spent Fuel, and Materials*

28. DL stated that SG6 has received regular updates from NDA on the completion of Magnox reprocessing and have concluded that an appropriate balance is being struck between safe operation of the plant and management of radioactive waste.

29. DL stated that SG6 continue to have an interest in the inventory for disposal and are beginning to consider its implications for the cost of a GDF.

30. DL provided an update on the SG6 work on uranium options. He reported that information is being gathered on the uranium inventory and the disposal safety case.

**Agenda Item 5. Presentation from Speaker: Professor Neil Hyatt (University of Sheffield)- “An assessment of radioactive wastes from nuclear fusion”**

31. NT introduced NH, and his talk surrounding fusion and the radioactive wastes that can arise. NH mentioned that there is currently no operating fusion power plant and won't be for decades. NH stated this provides the opportunity to innovate, apply a waste hierarchy, maximise recycling, and minimise waste by innovations in material science.

32. NH compared the energy released, waste products created and availability of fuel for the key reactions behind nuclear fission, fusion and natural gas



combustion, with fusion having “limitless” reactants with the use of breeding and results in stable products.

33. NH described how fusion can be achieved using magnetic and inertial confinement as well as the difficulties in creating the conditions necessary to engineer fusion.
34. NH described the process of extracting energy from the reactions through neutron collisions with the reactor vessel and the need for a tritium breeding blanket, providing a supply of tritium through reactions with neutrons and Lithium-6 and Lithium-7.
35. NH discussed the UK’s history and position regarding fusion in ZETA and JET. NH talked about future projects such as ITER, due to commence in 2035, DEMO, due in the 2040s, and STEP, also due to start operation in the 2040s.
36. NH stated that historically the global Fusion programme has aimed to minimise or eliminate long lived wastes, with an aim of achieving low level classification 100 years after end of life. NH stated the Fusion programme will produce a significant quantity of intermediate level waste 100 years after end of life.
37. NH stated that there are two primary sources of waste; tritium contaminated materials (TCM) and activated structural and component materials. NH stated the volume of TCM is hard to estimate, as well as the formation of other radionuclides from activated materials potentially providing a long-lived issue. NH stated that modelling studies of DEMO could provide some insight.
38. NH stated that there are three components of interest regarding activation, being the steel vacuum vessel, the lithium containing breeder blanket, and the tungsten divertor.
39. NH showed the differences between three breeder blankets, illustrating how material and construction choices affect end of life waste management. NH stated how the divertor will become highly activated, needs to be designed so it can be removed and managed as a highly activated component, as well as how material choices need to be considered regarding structural properties and risk of activation.
40. NH stated that there will be several kilotons of waste from the reactor vessel, however no spent fuel.
41. NH stated that the management of waste from fusion is grounded in the waste hierarchy. NH stated that it may be possible to reuse and recycle a significant amount of waste material. Currently, the required handling technology has not



been shown at the desired scale, making reuse and recycle still hypothetical. NH stated that the waste from fusion poses no conceptual challenge for geological disposal.

### **Agenda Item 6. Questions from the public**

42. William Evans asked if there is any operational waste from fusion. NH responded plasma-facing materials will be removed and replaced as part of normal servicing. This will also produce contact wastes during operation.
43. GT queried whether there is scope to reuse lithium in the breeder blanket. NH replied that it transmutes to tritium, and the tritium extraction and handling facility will recycle any unused lithium. GT commented that lithium is a limited resource. NH stated that other reactions are possible, and only small amounts of tritium are needed for the reaction.
44. RK asked to what extent radioactive waste management is a key factor in choice of design. NH stated that a key factor is how easy it is to control and separate activated components, to minimise highly activated wastes.
45. ST asked whether there has been any progress in international standards for fusion and its wastes. NH stated that UKAEA has performed activation analysis and looked at the classification of wastes under different national waste regimes.
46. CC commented that early tokamak reactors have presumably been decommissioned, and asked if lessons have been learned from this. NH stated that early experimental reactors were likely not as activated as modern fusion reactors. JET will likely be the first project to be highly activated during decommissioning, and has been considered in the UK radioactive waste inventory. Bruce Cairns stated that UKAEA report back to RWM about all active materials on their sites.
47. Graham Smith commented that the divertor is a heat generating waste after its end of life. NH stated that by the time it is classified as waste (at least 100 years after end of life) it is no longer heat generating.
48. NT asked whether different confinement systems have better or worse waste characteristics. NH stated that he was not sure.

### **Agenda Item 7. Any other business**

49. The next Open Plenary will be held remotely on 30<sup>th</sup> November.